

APPLICATION
FOR
UNITED STATES OF AMERICA

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

Be it known that I,

Giuseppe FEDRIGONI
Italian citizen,
of VERONA - ITALY

have invented certain improvements in

“METHOD FOR PRODUCING COATED PAPER WITH
PEARLESCENT EFFECT”

of which the following description in connection with the accompanying drawings is a specification, like reference characters on the drawings indicating like parts in the several figures.

The present invention relates to a method for producing coated paper with pearlescent effect.

BACKGROUND OF THE INVENTION

Currently, coated papers are increasingly important in the graphic
5 sector.

In particular, so-called ivory or embossed coated papers are rather widespread and are produced by combining the traditional processes for producing coated papers with the methods for obtaining the so-called ivory or embossed effect.

10 However, currently it is not easy to obtain a coated paper with pearlescent effect by using conventional processes.

The pearlescent effect, according to current knowledge, can in fact be obtained either by depositing, by means of a stiff blade, the pearlescent pigments on the paper medium on which the coating has been spread
15 beforehand, or by mixing the pearlescent pigments with the coating and then spreading the resulting mixture onto the paper medium.

However, it has been found that the products obtained with the methods described above are very poor.

The dimensions of the pearlescent pigments are in fact distinctly
20 larger (by approximately ten times) than those of conventional coatings, and it is therefore practically impossible to obtain a uniform mixture.

Furthermore, in order to allow pearlescent pigments to express their characteristic effect, they must remain completely on the surface, whereas if they are mixed with the coating they also distribute proximate to the paper
25 medium.

Finally, it should be noted that if the pearlescent pigments are deposited by means of a stiff blade, since they are, as mentioned, considerably larger than the pigments that constitute the coating, they form streaks and/or lines.

30 SUMMARY OF THE INVENTION

The aim of the present invention is to provide a method for producing coated paper with pearlescent effect that is capable of eliminating or in any case drastically reducing the drawbacks noted above of conventional methods.

5 Within this aim, an object of the invention is to provide a method for producing coated paper with pearlescent effect that allows to obtain a paper with high printability.

Another object of the present invention is to provide a technological solution that allows to provide a range of coated papers with pearlescent (or
10 slightly pearlescent) effect while maintaining a high brightness, so as to allow their use in the most disparate sectors, from graphics to packaging and covering to advertising.

Another object of the invention is to provide a method for producing coated paper with pearlescent effect that allows to obtain coated papers with
15 pearlescent effect on one or both sides of the paper medium.

This aim and these and other objects that will become better apparent hereinafter are achieved by a method for producing coated paper with pearlescent effect, characterized in that it sequentially comprises the steps of:

- 20 -- performing a first deposition, on at least one side of a paper medium, of at least one first layer of coating;
 -- performing a second deposition, over the first layer of coating, of a coating with pearlescent effect by means of a rotogravure/flexographic device.

25 Advantageously the coating with pearlescent effect comprises at least nitrocellulose resins, mica-based pigments, and a solvent.

According to another aspect, the present invention provides a coated paper with pearlescent effect, which is characterized in that it comprises a paper medium that has, at at least one side, at least one first layer of coating
30 and, over the first layer of coating, at least one layer of coating having a

pearlescent effect.

BRIEF DESCRIPTION OF THE DRAWINGS

Further aspects and advantages of the invention will become better apparent from the present detailed description of some currently preferred
5 examples of embodiments, given merely by way of non-limiting example with reference to the accompanying drawings, wherein:

Figure 1 is a perspective view of a coated paper with pearlescent effect according to the invention;

Figure 2 is a perspective view of a deposition cylinder;

10 Figure 3 is an enlarged-scale side elevation view of the outer surface of the deposition cylinder shown in Figure 2; and

Figure 4 is a sectional view, taken along the line IV-IV of Figure 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the examples of embodiments that follow, individual
15 characteristics, given in relation to specific examples, may actually be interchanged with other different characteristics that exist in other examples of embodiments.

Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject
20 of a disclaimer.

As shown by the figures, the present invention relates to a method for producing coated paper having a pearlescent effect, generally designated by the reference numeral 1.

In particular, the production process according to the invention
25 provides that at least one deposition of at least one layer 3a of coating is performed at at least one side 2a of a paper medium 2, first of all, by way of per se known devices or systems.

Also according to the invention, the method for producing coated paper with pearlescent effect provides for an additional deposition of a
30 pearlescent coating 3b over the coating layer 3a.

In particular, the additional deposition of pearlescent coating 3b is performed by using rotogravure (or flexographic) devices (or systems), constituted for example by a deposition roller 4, which has a plurality of deposition cells 5 at its outer side wall 4a.

5 In greater detail, a method for producing coated paper having a pearlescent effect, merely by way of example, can provide for a first deposition of a layer of conventional coating approximately 6-12 microns thick on both sides (2a and 2b) of a paper medium 2 that has a thickness of approximately 100 microns.

10 Then, according to a preferred embodiment, an additional layer of coating of approximately 1-8 microns per side is deposited on both sides.

It is evident that after these depositions (of "conventional" coating), the thickness of the medium will be approximately 116-140 microns.

15 According to the invention, a layer of pearlescent coating is then applied on one or both sides of the resulting medium by way of a system or device of the rotogravure/flexographic type, constituted for example by a deposition roller 4.

By way of example, this deposition or these depositions of layers of pearlescent coating is(are) performed by placing the medium, or rather both
20 faces of the medium, in contact with the outer side wall 4a of the deposition roller 4.

According to a preferred embodiment, the coating layer(s) containing the pearlescent pigments deposited by the deposition roller 4 has(have) a thickness of approximately 2-6 microns, which accordingly brings the total
25 thickness of the resulting paper to 120-152 microns.

Naturally, nothing forbids the use of initial paper media of different thickness, or the deposition of thicknesses of coating (or pearlescent coating) having thicknesses that differ from those indicated in the method described above.

30 Advantageously, the pearlescent coating comprises at least

nitrocellulose resins, mica-based pigments, and a suitable solvent.

According to another aspect, the present invention provides a coated paper with pearlescent effect 1, which is constituted by a paper medium 2 that has, at at least one side 2a, at least one coating layer 3a and, above the
5 coating layer 3a, at least one coating layer 3b with pearlescent effect.

All the characteristics of the invention described above as being advantageous, convenient or the like may also be omitted or replaced with equivalents.

All the details may further be replaced with other technically
10 equivalent elements.

The materials and the dimensions may be various according to requirements.

The disclosures in Italian Patent Application No. VR2003A000054 from which this application claims priority are incorporated herein by
15 reference.